

Technical Specifications

Technology

High frequency, low powered, electromagnetic coil system — monitored and controlled by a microprocessor system.

Frequency of Operation of Coil

Crystal controlled in the range 10 kHz to 1 MHz. Dual frequency & single frequency units are available and are referred to from now on as 2f & 1f respectively.

Product Throughput Speed

Units	Detector Speed Setting	
	Fast	
	Min	Max
m/min/mm of aperture diameter	0.05	7.5
ft/min/inch of aperture diameter	4	600

Higher and lower speeds are available on request.

Internal Battery

Discharge time: typical 6 months from power off at temperature of 20°C.

Battery life: typical 5 years

Nominal voltage: 3.6 Volts D.C.

Power Input

Voltage: 100 to 240 Volts AC

Mains supply voltage fluctuations not to exceed +10% / -15% of the nominal voltage+10% / -15%

Power: 100 VA *

Frequency: 50 to 60 Hz.

For connection to TN (EN60950-1:2001) power distribution systems only. For connections to other power distribution systems please contact your supplier.

Transient overvoltages according to installation category II.

* Assumes no loads on the switched power outputs.

Temperature Range

Storage: -10°C to +50°C (14°F to 122°F)

Operating: -10°C to +45°C (14°F to 113°F)

Humidity Range

Maximum relative humidity: 93% for temperatures up to 45°.

Warm Up Time

Zero seconds at an ambient temperature of 20°C.

Environmental Protection

GF, Painted & Stainless Steel: IP65, NEMA 12

Pipeline, Stainless Steel: IP66, NEMA 4X

Throat, Painted: IP65, NEMA 12

Throat, Stainless Steel: IP66, NEMA 4X

Note: To achieve the specified protection the module and power unit cover must be torqued down to 5 Nm (45 in.lbs).

Indoor Environmental Operating Conditions

Altitude up to 2000 m.

Pollution Degree 2 in accordance with IEC 664.

Sound Output

Less than 62 dBA at a distance of 1 m (without printer).

Switched Power Output

Switched by detector ON/OFF switch.

Switched live and neutral, non-switched earth. Not internally fused.

Maximum current: 1 A

Reject Relay

Volt free changeover contacts that operate on the detection of metal.

Maximum power: 500 W

Maximum current: 3 A (non-inductive)

Maximum voltage: 250 Volts A.C., or 30 Volts D.C. (non-inductive)

RCU/System Fault Relay (Optional)

Volt-free changeover contacts that operate when the Reject Confirmation Unit signals a reject fault.

Contact rating: see Reject Relay.

Detect Signal

Operates on the detection of metal.

Output type: NPN open collector

Maximum voltage: 35 Volts D.C.

Maximum current: 100 mA

Fault/Detector Active Output

Output that operates if a fault occurs in the metal detector or if the detector is inactive.

Output type: NPN open collector

Maximum voltage: 35 Volts D.C.

Maximum current: 100 mA

Q.A. Due/Overdue Output

Output that operates when a performance test becomes due or when a performance test becomes overdue.

Output type: NPN open collector

Maximum voltage: 35 Volts D.C.

Maximum current: 100 mA

Pack Sensor Requirements

Note: This product does not use this feature.

Speed Sensor Requirements

Note: This product does not use this feature.

Reject Confirmation Sensor Requirements

Operating voltage: 15 Volts D.C.

Operating current: 30 mA maximum

Output type: NPN or PNP open collector

RS232 Serial Communications

Two communication ports COM1 and COM2 are available from within the power unit enclosure.

Voltage levels as per RS232 standard, typically ± 9 volts.

Baud rate: 9600

Data bits: 7 or 8

Start bits: 1

Stop bits: 1

Parity bits: 1

Parity type: Odd

COM1: 2 or 4 wire control for use with printer (Hardware handshaking is only possible with 4 wire control).

COM2: 2 wire control for communications with metal detector.

Internal Counters

Reject Counter

Counts reject relay operations, not the number of detections, or the number of rejects.

Counter range: 0000 to 9999

This counter can be reset from the control panel.

Pack Counter

Note: This product does not use this feature.

Spherical Sensitivity

Dependent on aperture size, and frequency of operation, all sensitivity information is expressed in diameters of spherical samples.

Non spherical objects such as wires will exhibit an orientation effect, i.e. they can be more easily detected in certain axis. If the diameter of the wire is less than the spherical sensitivity setting the sample may not be detected in all orientations.

Sensitivity Ratios

Dependent on frequency of coil system e.g. at 300 kHz.

Non Ferrous x 1.1 to 1.3 Fe diameter (depending on the metal).

Stainless Steel x 1.2 to 1.5 Fe diameter (depending on type, most difficult to detect is type 316).

Sensitivity Gradient

Less than two diameters.

This is the difference in sensitivity measured at the centre of the aperture and the sensitivity at any other point in the aperture not closer than 10 mm to the surface.

Timer Ranges

Timer Type tm1

Type: Simple reject timer.

Reject time has a range of 50 ms to 60 s.

Timer types tm2 and tm2G

Note: The gated version of tm2 (tm2G) does not apply to this product.

Type: Fixed speed delayed reject timers.

Reject time has a range of 50 ms to 60 s.

Delay time has a range of 50 ms to 60 s. (0 ms delay time is also possible.)

Timer types tm3 and tm3G

Note: Timers tm3 and tm3G do not apply to this product.

Type: Variable speed delayed reject timers.

Signal shift with a range of 1 to 128 speed sensor pulses.

Reject shift/time with a range of 1 to 256 speed sensor pulses or 50 ms to 60 s.